



Efficacy of bio-fertilizers with NPK on growth and yield of onion (*Allium cepa* L.) cv. NASIK RED

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ABSTRACT

The present investigation was carried out at Horticulture Research Farm, Department of Applied Plant Science (Horticulture), Babasaheb Bhimrao Ambedkar University (A Central University), Lucknow-226025 (U.P.), India during the *Rabi* season of the year 2008-09. The experiment was laid out under Randomized Block Design with three replications. On the basis of present investigation, it can be concluded that the application of *Azospirillum* + 100% NPK was proved best effective for higher bulb yield in onion in cv. NASIK RED.

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Onion (*Allium cepa* L.) is one of the most important vegetables crops among the bulb crops, belongs to the family Alliaceae and having chromosomes No. $2n = 16$. It is cultivated in all parts of country. Onions are consumed in rather small quantities by most families. They are used in many houses almost daily primary as a seasoning for a wide variety dishes. Onion can be eaten raw or cooked. Raw onions are consumed as young green plants. Sometimes called spring onion or as bulbs, which are usually sliced or chopped, mild flavoured or colourful bulb onion are often chosen for sliced for cooking. Frequently, green onions are used. It is also use in processed form e.g. flakes, powder. For this purpose white varieties of onion are preferred. Alliums are characterized by the presence of remarkable, sulphur-containing compounds, which give them their distinctive and pungency. Onion contains methyl and propyl derivatives of alien but not true Allin. Onion oil yields methyl and propyl compounds. A yield of 0.002-0.003% can be obtained by steam distillation from 100 g of fresh bulbs. There has been interest in medicinal effects of Alliums. It is known to benefit on the prevention and treatment of a tuberculosis and coronary heart disease. Experimental evidence indicates benefit from onion or its

extracts in the treatment of diabetes, cancer and asthma. The dry-matter contents of allium vegetables usually are in the range of 7-15% with leaf shoots.

During the past decade, horticultural production has increased manifolds due to the advent of high yielding varieties, highly responding to input application especially fertilizers. Heavy use of fertilizers forming the soil sick accompanied by hazardous residual effect, is posing great threat to man and animal and overall agricultural ecology. In the modern cultivation of horticultural crops, heavy amount of fertilizers is consumed and the fertilizers are not only short in supply but costly too and produced at the cost of irreparable loss of non-renewable energy. In view of escalating energy cost, it will be a major limiting factor in increasing the agricultural production in days to come.

Therefore, it has been essential to involve and adopt a suitable strategy for integrated nutrient supply by using a judicious combination of chemical fertilizers, organic manures and bio fertilizer. It will be useful in curtailing over dependence over fertilizers for nutrient supply to plants.

Nitrogen fixing bacteria and phosphate stabilizers are main bio-fertilizers for horticultural crops. These micro-organisms are either free living in soil or symbiotic with